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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,051	12/04/2003	Frederic Catteau	22130-00016-US1	4839

59554 7590 11/09/2007

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EXAMINER	
MORILLO, JANELL COMBS	
ART UNIT	**PAPER NUMBER**
1793	

MAIL DATE	DELIVERY MODE
11/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/727,051	CATTEAU ET AL.	
	Examiner	Art Unit	
	Janelle Combs-Morillo	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 September 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *1-8,13 and 14* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-12 and 15-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 28, 2007 has been entered.

Claim Objections

2. Claims 16 and 18 are objected to because of the following informalities: said claims are improper hybrid claims, dependent on withdrawn process claim 1. The limitations of withdrawn independent process claim 1 must be written out in claims 16 and 18. Appropriate correction is required.

Claim Rejections - 35 USC § 102/103

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 9, 12, and 19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Haszler (US 6,406,567).

Haszler teaches an aluminum alloy wrought plate with a thickness $\geq$ 6 inches (column 2 line 56), wherein said plate has been processed by solution heat treatment, quenching, and stress

relief by compression 0.2-5% (Haszler at cl. 1). Haszler teaches said plate is stress relieved/ stress reduced through said process, and has significantly improved distortion after a machining step due to said stress reduction (column 5 lines 11, 15-16). Though Haszler does not mention the stored elastic energy achieved by said product by process, because Haszler teaches substantially identical product and process, then substantially the same properties, such as stored elastic energy, are expected to inherently occur. It is held that Haszler anticipates, or in the alternative, has created a prima facie case of obviousness of the presently claimed invention.

Once a reference teaching product appearing to be substantially identical is made the basis of a rejection, and the examiner presents evidence or reasoning tending to show inherency, the burden shifts to the applicant to show an unobvious difference. "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)), see MPEP 2112. In re Schreiber, 128 F.3d 1473, 1478, 44 USPQ2d 1429, 1432 (Fed.Cir.1997). Applicant has not clearly shown an unobvious difference between the instant invention and the prior art's product.

5. Claims 9, 12, and 20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over EP 1158068A1 (EP'068).

EP'068 teaches an aluminum alloy wrought plate with a thickness ≥ 12 mm (abstract), such as 500 mm (see example), wherein said plate has been processed by solution heat treatment, quenching, and stress relief by compression 1.5% (EP'068 at [0027]). EP'068 teaches said plate can be formed into airframe structures such as spars [0024]. Though EP'068 does not mention the stored elastic energy achieved by said product by process, because EP'068 teaches substantially identical product and process, then substantially the same properties, such as stored elastic energy, are expected to inherently occur. It is held that EP'068 anticipates, or in the alternative, has created a prima facie case of obviousness of the presently claimed invention.

Once a reference teaching product appearing to be substantially identical is made the basis of a rejection, and the examiner presents evidence or reasoning tending to show inherency, the burden shifts to the applicant to show an unobvious difference (see further discussion in paragraphs above).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 10, 11, 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP'068.

EP'068 is discussed in paragraphs above. Though EP'068 does not specify the L and W are greater than the claimed minimum, it would have been within the scope of EP'068, who teaches aluminum alloy thick plate products, to select a suitable L and W for said plate within the

claimed L*W>1m^2 or L*W>2m^2, as well as deforming wherein the thickness < width, etc. substantially as presently claimed.

Changes in size, shape, or sequence of adding ingredients is prima facie obvious in the absence of new or unexpected results (see MPEP 2144.04). The examiner asserts that where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. The prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 562 F.2d at 1255, 195 USPQ at 433. See also Titanium Metals Corp. v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985), see MPEP 2112.01.

Concerning claims 15-19, which mention a mold plate product or machined workpiece, EP'068 teaches that said alloy product is typically used in as thick plates for structural purposes [0024]. It would have been obvious to one of ordinary skill in the art to use the plate product taught by EP'068 for a mold plate or perform a step of machining on said plate taught by EP'068, because EP'068 teaches that said product is suitable for structural plate purposes (see [0024]).

8. Claims 10, 11, 15-18, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haszler (US 6,406,567).

Haszler is discussed in paragraphs above. Concerning claims 10 and 11, though Haszler does not specify the L and W are greater than the claimed minimum, it would have been within the scope of Haszler, who teaches aluminum alloy thick plate products, to select a suitable L and W for said plate within the claimed $L*W>1m^2$ or $L*W>2m^2$, as well as deforming wherein the thickness < width, etc. substantially as presently claimed.

Changes in size, shape, or sequence of adding ingredients is prima facie obvious in the absence of new or unexpected results (see MPEP 2144.04).

Concerning claims 15-18 and 20, which mention a mold plate product or aircraft spar, Haszler teaches that said alloy product is typically used in moulding construction (column 3 line 8) or aircraft construction (column 6 line 4).

9. Claims 9-12, 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haszler or EP'068 in view of"Aluminum and Aluminum Alloys" p. 317-320.

Haszler and EP'068 are discussed in paragraphs above. Haszler and EP'068 teach a plate product, but do not teach the instant maximum of stored energy. However, "Aluminum and Aluminum Alloys" p 319-320 teaches aluminum alloys can be subject to heat treatments (more particular, annealing) in order to soften and increase ductility (i.e. decrease stored energy at the expense of strength). It would have been obvious to one of ordinary skill in the art to apply a heat treatment to soften/decrease the effects of cold working (p 319, 1st column) in order to achieve the predictable purpose of softening and increasing ductility.

Changes in concentration or temperature will generally not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical, i.e. they produce a new and unexpected result. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955), Peterson, 315 F.3d at 1330, 65 USPQ2d at 1382 ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages"). A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).

Response to Amendment/Arguments

10. In the response filed on September 28, 2007, applicant submitted various arguments traversing the rejections of record.

11. The examiner agrees that Haszler and EP'068 teach aluminum alloy plate products substantially identical to the claimed plate product, and processed by compression in substantially the thickness direction (though if the thickness= width, then compression could take place in the width direction).

12. The declaration under 37 CFR 1.132 filed September 21, 2007 is insufficient to overcome the rejection of claims 9-12, 15-20 based upon Haszler or EP'068 as set forth in the last Office action because: declarant submits evidence that the claimed invention is different and

unexpectedly superior to the products of Haszler or EP'068 both of which employ compression, however, applicant has not a) established a clear nexus between the claimed invention and the unexpected results, b) shown that the instant Wtbar limitation is not expected in view of the prior art of record.

13. Concerning a), independent product by process claim 9 is drawn to an aluminum alloy plate (any alloy) product about 5-40 inches thick, subjected to the claimed processing steps, wherein the Wt_{bar} along the T direction <0.5 kJ/m^3. Claim 16 is drawn to an injection mold comprising a plate ≥ 5 inches processed by the claimed processing steps (claim 18 is substantially identical to 16, but is drawn to a blow mold comprising a plate with such parameters). The example of the invention [0055-0056], Fig. 11, is a 16 in thick block of AA 7010, processed such that the direction of compression was parallel to the longest dimension of the block (Fig. 11), and takes place in one compression step, results in Wtbar values of 0.06 and 0.14 kJ/m3. It is not clear that the claimed invention is expected to behave in substantially the same manner as the tested example (over the claimed broad recitation of any aluminum alloy, in a thickness of 5-40 inches, processed in the claimed steps).

14. Concerning b), Declarant's argument that the present invention is allowable over the prior art of record because the prior art would not be expected to meet the instant Wtbar limitation when through thickness compression is utilized has not been found fully persuasive. Declarant states a comparative example processed by through thickness compression results in values for Wtbar of 3.5 and 0.37 kJ/m3. The examiner points out that 0.37 kJ/m3 meets the presently claimed Wtbar limitation (the instant claims appear to be drawn to a discrete value of Wtbar present, not an average or total value).

15. Applicant's argument that the present invention is allowable over the prior art of record because the alloy of the invention exhibits Wtbar values surprisingly low compared to the values obtained by the prior art has not been found clearly persuasive. The examiner agrees that values of Wtbar of 0.06 and 0.14 kJ/m3 are much lower than the discrete value of Wtbar exhibited by the comparative result of Wtbar =3.5 kJ/m3. However, applicant has not shown a clear nexus between the example of the invention, and the instant product by process claim language of independent claim 9, 16, or 18. Additionally, as stated above, "Aluminum and Aluminum Alloys" teaches heat treating by annealing is an alternative process, expected to provide stress relief (at the expense of lowering strength). Applicant has not shown the instant product by process is different (i.e. unexpected combination of higher strength and low stored energy) compared to the stress-relieved plate product taught by the prior art.

16. The argument that the presently claimed invention shows unexpected results with regard to the prior art of record has not been found persuasive because there is "no adequate basis for reasonably concluding that the great number and variety of compositions included in the claims would behave in the same manner as the tested composition" *In re Lindner*, 457 F.2d 506, 509, 173 USPQ 356, 359 (CCPA 1972).

17. The nonobviousness of a broader claimed range can be supported by evidence based on unexpected results from testing a narrower range if one of ordinary skill in the art would be able to determine a trend in the exemplified data which would allow the artisan to reasonably extend the probative value thereof. *In re Kollman*, 595 F.2d 48, 201 USPQ 193 (CCPA 1979).

18. Applicant should establish a nexus between the rebuttal evidence and the claimed invention, i.e., objective evidence of nonobviousness must be attributable to the claimed invention, see MPEP 2144.08. The weight attached to evidence of secondary considerations by the examiner will depend upon its relevance to the issue of obviousness and the amount and nature of the evidence, see MPEP 716.01(b). Note the great reliance placed on this type of evidence by the Supreme Court in upholding the patent in United States v. Adams, 383 U.S. 39,148 USPQ 479 (1966). To be given substantial weight in the determination of obviousness or nonobviousness, evidence of secondary considerations must be relevant to the subject matter as claimed, and therefore the examiner must determine whether there is a nexus between the merits of the claimed invention and the evidence of secondary considerations. Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 305 n.42, 227 USPQ 657, 673-674 n. 42 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986).

Conclusion

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 8:30 am- 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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JCM
November 2, 2007